**TOPIC 1: Economics, Politics, and Worldviews**

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| **Standards** | **10-9** | **8** | **7** | **6** | **5** | **4-3** | **2-0** |
| Globalization | Compare and contrast multiple global economic factors that have impacted the environment. | Identify a specific impact the global economy has on the environment and explain social and political outcomes. | Discuss the impact the global economy has on the environment. | Identify the impact the global economy has on the environment. | Very limited achievement demonstrated | Minimal achievement demonstrated | No evidence of achievement |
| World Bank | Compare and contrast outcomes of multiple World Bank goals and their environmental impacts. | Identify and explain a specific goal of the World Bank and its impact on an environmental issue. | Explain the goals of the World Bank in relation to environmental issues and methods to achieve these goals. | Recognize the goals of the World Bank in relation to environmental issues and methods to achieve these goals. | Very limited achievement demonstrated | Minimal achievement demonstrated | No evidence of achievement |
| Tragedy of the Commons | Analyze how the misuse of one resource impacts other resources in a region illustrating the tragedy of the commons. | Identify a specific resource and how its misuse illustrates the tragedy of the commons. | Explain how lack of ownership can lead to the tragedy of the commons. | Identify how lack of ownership can lead to the tragedy of the commons | Very limited achievement demonstrated | Minimal achievement demonstrated | No evidence of achievement |
| Relevant Laws and Treaties | Analyze the impact of multiple economic laws/treaties on an environmental issue. | Identify a specific economic law or treaty and describe its impact on an environmental issue. | Describe relevant laws and treaties to include economic devices such as trade restrictions, embargoes, tariffs and quotas. Include NAFTA and, Cuban embargo. | Identify the relevant laws and treaties to include economic devices such as trade restrictions, embargoes, tariffs and quotas. Include NAFTA and Cuban embargo. | Very limited achievement demonstrated | Minimal achievement demonstrated | No evidence of achievement |

**Topic 2: The Basics of Ecosystems**

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| **Standards** | **10-9** | **8** | **7** | **6** | **5** | **4-3** | **2-0** |
| Ecological Niches | Compare and contrast ecological niches of different categories of organisms. | For a specific species, identify specific components of its niche. | Identify the components of ecological niches. | Identify some of the components of ecological niches. | Very limited achievement demonstrated | Minimal achievement demonstrated | No evidence of achievement |
| Inter-dependence of Organisms | Illustrate the relationships among organisms within a complex ecosystem labeling specific trophic levels indicating the flow of energy (laws of thermodynamics). | Illustrate the relationships among organisms within populations, communities, ecosystems, and biomes using a food chain or web. | Identify the relationships among organisms within populations, communities, ecosystems, and biomes. | Identify some of the relationships of organisms within populations, communities, ecosystems, and biomes. | Very limited achievement demonstrated | Minimal achievement demonstrated | No evidence of achievement |
| Illustrate the relationships among organisms within populations, communities, ecosystems, and biomes using an energy pyramid. | Describe how the laws of thermodynamics relate to energy flow in ecosystems. | Define the laws of thermodynamics that relate to energy flow in ecosystems. | Very limited achievement demonstrated | Minimal achievement demonstrated | No evidence of achievement |
| Species Diversity and Edge Effects | Compare the impact of the loss of diversity in two different ecosystems. | Identify a specific example indicating how species diversity impacted ecosystem stability. | Analyze the importance of species diversity to sustainability of ecosystems. | List reasons why species diversity is important to sustainability of ecosystems | Very limited achievement demonstrated | Minimal achievement demonstrated | No evidence of achievement |
| Terrestrial Biomes and Aquatic Life Zones | Analyze the importance of a biome/aquatic life zone to global biodiversity. | Compare two major biomes/aquatic life zones including integral species, climate, location, and quantify the relative biodiversity in each. | Describe major characteristics of biomes/aquatic life zones including integral species, climate, and location. | Define major characteristics of biomes/aquatic life zones including integral species, climate, and location. | Very limited achievement demonstrated | Minimal achievement demonstrated | No evidence of achievement |
| Carbon, Nitrogen, Phosphorus, and Water Cycles | Analyze how humans have disrupted one of the geochemical cycles. | Illustrate the importance of the water, carbon, nitrogen and phosphorus cycles to ecosystems. | Identify the importance of the water, carbon, nitrogen and phosphorus cycles to ecosystems. | Identify the importance of three of the four geochemical cycles. | Very limited achievement demonstrated | Minimal achievement demonstrated | No evidence of achievement |

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| **Topic 2: The Basics of Ecosystems (continued)** | | | | | | | |
| **Standards** | **10-9** | **8** | **7** | **6** | **5** | **4-3** | **2-0** |
| Conservation of Matter | Compare and contrast the law of conservation of matter with the 1st law of thermodynamics. | Give specific, real world examples of law of conservation of matter to ecosystems. | Describe the importance of the law of conservation of matter to ecosystems. | Define the law of conservation of matter. | Very limited achievement demonstrated | Minimal achievement demonstrated | No evidence of achievement |
| Population Ecology | In a specific ecosystem give examples of each type of species role and the interactions among species. | Describe how species roles and interactions benefit an ecosystem. | Distinguish and give examples of roles played by species and their interactions. | Define species roles and interactions. | Very limited achievement demonstrated | Minimal achievement demonstrated | No evidence of achievement |
| Explain the influence of limiting factors on multiple species in Yellowstone National Park. | Illustrate a real world example of how limiting factors determine population size. | Identify multiple ways populations change in size and the limiting factors that determine the carrying capacity of a species. | Identify some ways populations change in size and some limiting factors that determine the carrying capacity of a species. | Very limited achievement demonstrated | Minimal achievement demonstrated | No evidence of achievement |
| Reproductive Strategies and Survivorship | Analyze the survivability of R-selected species and K-selected species in the event of global climate change. | For a specific R-selected species and/or K-selected species describe the reproductive strategies that make it successful (or not). | Compare and contrast different reproductive strategies to include R-selected species, K-selected species, and their length of survivorship. | List characteristics of R-selected species and K-selected species. | Very limited achievement demonstrated | Minimal achievement demonstrated | No evidence of achievement |

**Topic 3: Sustaining Biodiversity**

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| **Standards** | **10-9** | **8** | **7** | **6** | **5** | **4-3** | **2-0** |
| Biodiversity | Rank factors according to their impact on the loss of biodiversity and provide evidence to justify your claim. | Compare human and natural factors that contribute to the loss of biodiversity. | Evaluate factors that contribute to the loss of biodiversity. | List factors that contribute to loss of biodiversity. | Very limited achievement demonstrated | Minimal achievement demonstrated | No evidence of achievement |
| Maintenance Through Conservation | For a specific ecosystem, analyze the effectiveness of current conservation practices. | Evaluate the effectiveness of conservation management practices. | Discuss how biodiversity can be maintained through conservation practices. | List conservation practices. | Very limited achievement demonstrated | Minimal achievement demonstrated | No evidence of achievement |
| Relevant Laws and Treaties | Analyze the impact of multiple laws/treaties on an environmental issue. | Identify a specific law or treaty and describe its impact on an environmental issue. | Evaluate the effectiveness of the relevant laws and treaties. | Identify the relevant laws and treaties. | Very limited achievement demonstrated | Minimal achievement demonstrated | No evidence of achievement |

**Topic 4: Human Population Ecology**

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| **Standards** | **10-9** | **8** | **7** | **6** | **5** | **4-3** | **2-0** |
| Human Population Dynamics | Explain the influence of current and historical factors in developing versus developed nations on population growth. | Illustrate a real world example of how current and historical factors influence population growth. | Describe current and historical factors affecting population growth. | List current and historical factors affecting population growth. | Very limited achievement demonstrated | Minimal achievement demonstrated | No evidence of achievement |
| Compare and contrast age-structure diagrams of multiple countries. | Develop an age structure diagram based on a data set. | Analyze an age-structure diagram. | Define age-structure diagram. | Very limited achievement demonstrated | Minimal achievement demonstrated | No evidence of achievement |
| Evaluate your own ecological footprint and develop strategies to lessen your ecological impact. | Compare ecological footprints from multiple countries (developed and developing). | Calculate an ecological footprint. | Define ecological footprint. | Very limited achievement demonstrated | Minimal achievement demonstrated | No evidence of achievement |